Claims

1. Apparatus for recording a thermooptical image of the female breast having:

a casing (4), which is opaque except for side facing the breast, where it carries a frame (9),

a thermooptical foil (1), which is fixable to the frame (9), a transparent cooling box (7) located on the side of the frame (9) remote from the breast and having an antireflection disk (6) located on its side remote from the breast and which is provided with a cooling medium inlet (12a) and a cooling medium outlet (12b) and in its starting position is not in contact with the foil (1),

a thermostat (17) adjustable with respect to the temperature of a cooling medium and which for the formation of a cooling circuit is connected by means of hose lines (12c) to the cooling medium inlet (12a) and outlet 12(b),

an illuminating system for illuminating the thermooptical film (1) located in the casing (4),

a digital camera (2) positioned facing the frame (9) in the casing (4),

a clamping device for clamping the breast between two surfaces, one of the two surfaces being formed by the foil (1),

a contact producing device for producing a surface contact between a side of the cooling box (7) facing the foil (1) and the side of the foil (1) remote from the breast,

a timing system for measuring the time period as from the producing of contact and

a release mechanism connected to the timing system for the automatic release of the digital camera (2) at the end of a presettable time period.

2. Apparatus according to claim 1, characterized in that the clamping device comprises a pad (14) connected to the casing (4) and extending parallel to the frame (9) and whose spacing from the latter is variable.

3. Apparatus according to claim 2, characterized in that the pad (14) is connected to the casing (4) by means of a mounting support (15) arranged at right angles thereto.

4. Apparatus according to claim 1, characterized in that the frame (9) is quadrangular and is held on the casing (4) at its four corners by means of pins (10), springs (11) extending concentrically to the pins (10) in such a way that a foil (1) fixed to the frame (9) in an unloaded state of the springs (11) is at a distance from the cooling box (7).

5. Apparatus according to claim 4, characterized by a locking device for locking the frame (9) on producing contact between the foil (1) and the cooling box (7) after compressing the springs (11).

6. Apparatus according to claim1, characterized by a multi-articulation arm, to whose one end is fitted the casing (4).

7. Apparatus according to claim 6, characterized by an instrument trolley (19) connected to the other end of the arm (18).

8. Apparatus according to claim 1, characterized by a screen (16) connected to the digital camera (2).

9. Apparatus according to claim 1, characterized by a computer (3) with a keyboard (13).

10. Apparatus according to claim 9, characterized in that the computer (3) contains the timing system and the release mechanism.

11. Apparatus according to claim 1, characterized by a storage means for storing the digital images recorded by means of the digital camera (2).

12. Apparatus according to claim 1, characterized by an output device for outputting the digital images on a printer or a storage medium.

13. Apparatus according to claim 1, characterized by an image evaluating device connected to the digital camera (2) for the automatic evaluation of the information contained in the recorded image with respect to the existence of a pathological change.

14. Apparatus according to claim 13, characterized in that the image evaluating device has a means for comparing the present image with earlier images of the same breast or with reference images.

15. Apparatus according to claim 13, characterized in that the image evaluating device has a means for examining an image for structures or features characteristic of mammary carcinomas.

16. Apparatus according to claim 14, characterized in that the screen (16) is subdivided into two windows, one window being used for the display of the present image and the other window for the display of an earlier image of the same breast or a reference image.